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10/590,928	10/20/2006	Tomoya Sugita	28951.1185	4212

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STEPTOE & JOHNSON LLP
1330 CONNECTICUT AVE., NW
WASHINGTON, DC 20036

EXAMINER	
BROOKS, JERRY L.	

ART UNIT	PAPER NUMBER
2851	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,928	SUGITA ET AL.	
	Examiner	Art Unit	
	JERRY BROOKS	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/21/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchiyama (5,851,060).

With respect to claim 1, Uchiyama discloses a two-dimensional image forming apparatus comprising (fig.3): a light source (2); a two-dimensional image forming part (8a and 8b, SLMs, see col. 4, line 55) for forming a two-dimensional image by the light emitted from the light source (2); an enlarging and projection part (9, projection lens) for enlarging and projecting the two-dimensional image formed by the two-dimensional image forming part; a light path switching part (4) for switching and selecting a path for the light emitted from the light source (2), among a first path (A) including both the two-dimensional image forming part and the enlarging and projection part and a second light path (B) which does not include at least one of the two-dimensional image forming part and the enlarging and projection part (path B does not include the two-dimensional image forming part).

With respect to claim 2, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 1, wherein the second light path (B) does not include the

two-dimensional image forming part(path B does not include the two-dimensional image forming part).

With respect to claim 6, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 1 wherein the light path switching part (4) includes: a mirror (4); and a moving mechanism (col. 5, lines 6-20) for moving the mirror between a position (see fig.3 wherein number 1 is circled) at which the mirror (4) reflects the light emitted from the light source (1), which position is on a light path of the emitted light from the light source (see fig.1 and fig.4 wherein number 1 is circled), and a position (see fig.3 wherein number 2 is circled) which is not located on the light path of the light emitted from the light source (see fig.1 and fig.4 wherein number 2 is circled).

With respect to claim 9, Uchiyama discloses a two-dimensional image forming apparatus comprising (fig.3): a light source (1); a two-dimensional image forming part (SLM, 8a and 8b) for forming a two-dimensional image by the light emitted from the light source (1); an enlarging and projection part (9) for enlarging and projecting the two-dimensional image formed by the two-dimensional image forming part (SLM, 8a and 8b); a light path branching part (mirror 4 or mirror 5) for branching a path for the light emitted from the light source (1) so that a part of the emitted light propagates on a first light path (A) which includes both the two- dimensional image forming part and the enlarging and projection part, and the other part of the emitted light propagates on a second light (B) path which does not include at least one of the two- dimensional image forming part (path B does not include the two dimensional image forming part) and the enlarging and projection part.

With respect to claim 10, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 9, wherein the light branching part (formed by mirror 4) is disposed between the light source (1) and the two-dimensional image forming part (8a and 8b).

With respect to claim 11, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 9, wherein the light path branching part (formed by mirror 5) is disposed between the two-dimensional image forming part (fig.3, 8a and 8b) and the enlarging and projection part (fig.3, 9).

Claims 1, 3, 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated Kwon (5,772,301).

With respect to claim 1, Kwon discloses a two-dimensional image forming apparatus comprising (fig. 4): a light source (1 prime); a two-dimensional image forming part (10) for forming a two-dimensional image by the light emitted from the light source (1 prime); an enlarging and projection part (11) for enlarging and projecting the two-dimensional image formed by the two-dimensional image forming part (10); a light path switching part (11, the projection lens is movable; see col. 4, lines 15-17) for switching and selecting a path (see the path on which 10 and 6 prime lie) for the light emitted from the light source, among a first path (the path on which 10 and 6 prime lie) including both the two-dimensional image forming part (10) and the enlarging and projection part (11, projection lens is being moved to the first path) and a second light path (the path on

which 8 and 6 lie) which does not include at least one of the two-dimensional image forming part and the enlarging and projection part (see fig.4, as the projection lens 11 is moved to the first path, the second path will not include the enlarging and projection part, projection lens 11).

With respect to claim 1, Kwon discloses a two-dimensional image forming apparatus comprising (fig. 8: fifth embodiment): a light source (1); a two-dimensional image forming part (10) for forming a two-dimensional image by the light emitted from the light source (1 prime); an enlarging and projection part (11 prime) for enlarging and projecting the two-dimensional image formed by the two-dimensional image forming part (10); a light path switching part (12 or 12 prime, mirror is movable; see col. 5, lines 47-60) for switching and selecting a path (see the path on which 10 and 6 prime lie) for the light emitted from the light source (1), among a first path (the path on which 10 and 6 prime lie) including both the two-dimensional image forming part (10) and the enlarging and projection part (12, projection lens can be moved to the first path where it become 12 prime) and a second light path (the path on which 8 and 6 lie) which does not include at least one of the two-dimensional image forming part and the enlarging and projection part (see fig.8, as the mirror (12) is moved to the first path, the second path will not include the image forming part 10).

With respect to claim 3, Kwon discloses the two-dimensional image forming apparatus as defined in Claim 1, wherein the second light path does not include the enlarging and projection part (see fig.4, as the projection lens 11 is moved to the first

path, the second path will not include the enlarging and projection part, projection lens 11).

With respect to claim 5, Kwon discloses the two-dimensional image forming apparatus as defined in Claim 3, wherein the light switching part is a moving mechanism (the mechanism for moving the lens is inherent in col.4, lines 12-25) for moving the enlarging and projection (11) part between a position which is located on a light path of the emitted light from the light source (the first path on which 10 and 6 prime lie as discussed above) and a position which is not located on that light path (the second path on which 8 and 6 lie as discussed above).

With respect to claim 7, Kwon discloses the two-dimensional image forming apparatus as defined in Claim 1(fifth embodiment; fig.8), wherein the second light path (the second path on which 8 and 6 lie as discussed above) includes an enlarging optical system (projection lens 11) or a dispersion optical system, and the emitted light is irradiated toward the outside of the apparatus (see 14, projection screen) via the enlarging optical system (11) or the dispersion optical system when the light path of the emitted light from the light source is switched (switched performed by moving 12 prime to the 12 position, see fig. 8) so that the emitted light propagates on the second light path.

With respect to claim 8, Kwon discloses the two-dimensional image forming apparatus as defined in Claim 1(fifth embodiment; fig.8), wherein the second light path (the second path on which 8 and 6 lie as discussed above) includes the liquid crystal panel (10), and the emitted light (from light source 1) is employed as back light of the

liquid crystal panel (10) when the light path of the emitted light from the light source is switched (the light path is switched as 12 prime moves to 12) so that the emitted light (light from light source1) propagates on the second light path.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4 is rejected under 35 U.S.C. 103(a) as being obvious over Kwon (5,772,301) in view Tatsuo (JP 08-062721 A).

With respect to claim 4, Kwon discloses the two-dimensional image forming apparatus as defined in claim 2, but does not disclose the light path switching part is a rotation mechanism which makes rotate the light source so that the direction of the light emitted from the light source is changed.

Tatsuo discloses a two-dimensional image forming apparatus comprising (see description of notations, fig.6 and fig.2): a light source (fig. 2, 18 and 19); a two-dimensional image forming part (14) for forming a two-dimensional image by the light emitted from the light source; an enlarging and projection (fig.6, 7b) part for enlarging and projecting the two-dimensional image formed by the two-dimensional image forming part (fig.2, 14); and teaches where in a path switching part (9) is a rotation mechanism

which makes rotate the light source (the rotation of element 3, inherently rotates the light source) so that the direction of the light emitted from the light source is changed (in fig. 6 the light path is changed from 6a to 6b).

It would been obvious at the time of invention to one of ordinary skill in the art to modify the light source of Kwon with the teaching of Tatsuo to rotate the light source (fig. 8,1) to reduce material cost by removing the need for mirror (2) in fig.8 (see col.5, lines 40-46 where mirror 2 can be taken aside).

Claims 15 is rejected under 35 U.S.C. 103(a) as being obvious over Uchiyama (5,851,060) in view of Nagasawa (7,133,078).

With respect to claim 15, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 11, but does not disclose wherein the light path branching part is a half mirror.

Nagasawa discloses a two-dimensional image forming apparatus wherein the light path branching part (5) is a half mirror (col.3, lines 30-35).

It would obvious at the time of invention to one of ordinary skill in the art to use Nagasawa's half mirror in stead of Uchiyama's rotating mirror (5) to reduce the material of the branching part.

Claims 13, 14, 16, and 17 is rejected under 35 U.S.C. 103(a) as being obvious over Uchiyama (5,851,060) in view of Weber (6,364,487).

With respect to 13, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 1, but does not disclose wherein the light source is an LED.

Weber discloses a two dimension image forming apparatus (col.1, lines 20-26) wherein the light source is a Led (lines 23-24)

. Weber further discloses that an LED is typically a "spectrally narrow band light source reduces the need for color filters (col.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Uchiyama to use a LED as a light source as taught by Weber to reduce the cost or size of Uchiyama's device

With respect to 14, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 1, but does not disclose wherein the light, source is a laser.

Weber discloses a two dimension image forming apparatus (col.1, lines 20-26) wherein the light source is a Laser (col.1, lines 23-24). Weber further discloses that a laser is typically a "spectrally narrow band light source reduces the need for color filters (col.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Uchiyama to use a laser as a light source as taught by Weber to reduce the cost or size of Uchiyama's device.

With respect to 16, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 9, but does not disclose wherein the light source is an LED.

Weber discloses a two dimension image forming apparatus (col.1, lines 20-26) wherein the light source is a Led (lines 23-24). Weber further discloses that an LED is typically a "spectrally narrow band light source reduces the need for color filters (col.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Uchiyama to use a LED as a light source as taught by Weber to reduce the cost or size of Uchiyama's device

With respect to 17, Uchiyama discloses the two-dimensional image forming apparatus as defined in Claim 9, but does not disclose wherein the light source is a laser.

Weber discloses a two dimension image forming apparatus (col.1, lines 20-26) wherein the light source is a Laser (lines 23-24). Weber further discloses that a laser is typically a "spectrally narrow band light source reduces the need for color filters (col.1, lines 23-24)" which would reduce the size or cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the device of Uchiyama to use a laser as a light source as taught by Weber to reduce the cost or size of Uchiyama's device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY BROOKS whose telephone number is (571)270-5711. The examiner can normally be reached on Monday-Friday, 9 a.m.- 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JERRY BROOKS/
Examiner, Art Unit 2851

/William C. Dowling/
Primary Examiner, Art Unit 2851